

REMARKS**I. Status of the Claims**

Claims 1-8, 10-12, and 30-32 were previously pending in the application. Claims 1, 2, 6-8, 10, and 30-32 are amended above. New claims 33-41 are presented above. After entry of all amendments, claims 1-8, 10-12 and 30-41 are pending in the application.

Applicant respectfully requests consideration of claims 1-8, 10-12 and 30-41.

II. Amendments to the Claims and Support for New Claims 33-41

Claims 1, 2, 6-8, 10 and 30-32 are amended above. Support for the claim amendments can be found throughout the specification, claims, abstract and figures as originally filed. For example, support for the claim amendments can be found at page 4, lines 33-36; page 7, lines 5-13; Example 4; Example 5; and Example 9.

Claim 1 has been amended above to define an iron chelator delivery system for treating iron overload in the heart, the system comprising a lipid carrier and an antibody for targeting at least one cardiac protein.

Claim 2 has been amended above to correct a typographical error. In particular, the term “2,3-dihydroxybeboic acid” has been amended to read “2,3-dihydroxybenzoic acid.”

Claim 6 has also been amended above to correct a typographical error. In particular the term “10 nM” has been amended to read “10 nm” to provide the proper units for the liposome size.

Claim 7 has been amended above to define an iron chelator delivery system for targeting the heart.

Claim 8 has been amended above to define that the antibody of claim 1 is selected from certain listed cardiac proteins.

Claim 10 has been amended above to depend from claim 31.

Claim 30 has been amended above by deleting the terms “actin” and “tropomyosin.”

Claim 31 has been amended above to define an iron chelator delivery system for treating iron overload in the liver.

Claim 32 has been amended above to define further the liver cell receptor recited in claim 31.

New claims 33-41 are presented in the amendments above. Support for new claims 33-41 can be found throughout the specification, abstract, claims and figures as originally filed. Support for new claim 33 can be found, for example, at page 3, lines 29-34.

Support for new claim 34 can be found, for example, at page 3, lines 37-38.

Support for new claim 35 can be found, for example, at page 3, lines 12-13.

Support for new claim 36 can be found, for example, at page 3, lines 29-34.

Support for new claim 37 can be found, for example, at page 3, lines 37-38.

Support for new claim 38 can be found, for example, at page 3, lines 12-13.

Support for new claim 39 can be found, for example at page 3, lines 21-28; page 4, lines 23-30; page 5, lines 23-29; page 5, line 36 to page 6, line 2; and page 6, lines 15-18.

Support for new claim 40 can be found, for example, at page 3, lines 29-34.

Support for new claim 41 can be found, for example, at page 4, lines 30-38.

No new matter is added by these amendments. Applicant respectfully requests entry of the above amendments to the claims.

III. Claims 1-8, 10-17 and 30-34 Meet the Requirements of 35 U.S.C. § 112

In the final Office Action mailed on May 13, 2003, claims 1-8, 10-17 and 30-32 were rejected under 112, first and second paragraphs. Applicant traverses the rejection in view of the amendments to claims 1-8, 10-17 and 30-32.

Claims 1, 7, and 31 have been amended to define an iron chelator delivery system comprising iron chelator and lipid carrier, where the lipid carrier includes: (1) an antibody for targeting a cardiac protein (claim 1), (2) a cationic or anionic charge group for targeting the heart, (claim 7), or (3) a liver cell targeting agent for targeting a liver cell receptor (claim 31). These amendments are believed to overcome the rejection. Accordingly, claims 1-8, 10-17 and 30-34 fully meet the requirements of 35 U.S.C. § 112, first and second paragraphs. Withdrawal of the rejection is respectfully requested.

IV. Claim 31 is Patentable over Torchlin

In the final Office Action, claim 31 was rejected under § 102(b) over Torchlin (U.S. 5,534,241). Applicant respectfully traverses the rejection.

Claim 31 has been amended to define an iron chelator delivery system comprising an iron chelator and a lipid carrier, wherein the lipid carrier includes a liver cell targeting agent for targeting at least one liver cell receptor. Torchlin fails to disclose the iron chelator delivery system defined by claim 31. Instead, Torchlin is directed to amphipathic polychelating agents (Col. 1, lines 40-42) that are linked to the side groups of a polymeric moiety. Also see Abstract. In particular, the polychelating agents of Torchlin are covalently linked to a lipid anchor and a polymeric moiety. See the figures and claims of Torchlin. In contrast to the covalently linked polychelating agents of Torchlin, claim 31 is directed to an iron chelator delivery system comprising an iron chelator. Thus, Torchlin fails to anticipate claim 31.

In addition, Torchlin teaches away from claim 31. The iron chelator delivery system defined by claim 31 is intended to be taken up into the target cell. In contrast to claim 31, Torchlin's polychelating agents are designed to increase their circulation time and decrease cellular uptake. See Col. 9, lines 13-17 and Col. 9, line 60 – Col. 10, line 14. Consequently, Torchlin fails to teach or suggest the claimed subject matter, and, therefore, claim 31 is patentable over Torchlin.

Applicants respectfully requests withdrawal of this rejection.

V. Claim 31 is Patentable over Unger

In the final Office Action, claim 31 was rejected under § 102(b) over Unger (U.S. 5,585,112). Applicant disagrees that Unger anticipates claim 31 and traverses the rejection.

Claim 31 is patentable over Unger, because Unger fails to disclose the subject matter defined by claim 31. In particular, Unger is directed to gaseous or gas filled liposomes. There is no teaching or suggestion that the gas filled liposomes of Unger are used, or could be used, to target a liver cell receptor to reduce iron. Rather, in stark contrast to the iron chelator delivery system defined by claim 31, which is intended to remove iron, Unger teaches gas filled liposomes intended to deliver species. For example, at Col. 39, lines 31-56 Unger teaches use of perfluorobutane-filled liposomes to enhance imaging of the heart and liver. Such liposomes are designed for delivery of perfluorobutane and not removal of iron. That is, the liposomes are used to deliver perfluorobutane to these organs. Also, Unger discloses using iron containing liposomes to increase the rate of reactive oxygen intermediates by delivery of metal species. See Col. 37, lines 33-51. There is no disclosure, however, in Unger of excess iron

removal using an iron chelator delivery system that can target a liver cell receptor. Therefore, Unger fails to anticipate the subject matter of claim 31.

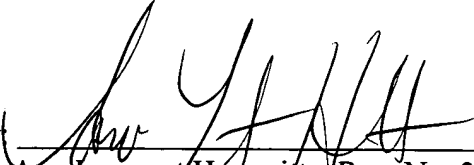
Applicant respectfully requests withdrawal of the rejection.

VI. Conclusion

In view of the foregoing amendments and remarks, claims 1-8, 10-12, and 30-41 are allowable. A notice to this effect is respectfully requested.

If the Examiner believes, after consideration of the foregoing remarks, that the application is not in condition for allowance, Applicant respectfully invites the Examiner to call Applicant's attorney at the telephone number listed below.

Respectfully submitted,
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